

REMARKS/ARGUMENTS

Claim 1-20 are pending in the present application.

The Applicant filed the original application on April 5, 2001.

The Examiner mailed the first, non-final Office Action on September 24, 2004, wherein claims 1-5, 7-20 were rejected under 35 USC 102(e) as being anticipated by Krishna.

The Examiner mailed a second, non-final Office Action on March 24, 2005, wherein claims 1-20 were rejected under 35 USC 103(a) as being unpatentable over Jones in view of King.

The Examiner mailed a third, non-final Office Action on September 8, 2005, wherein claims 1-20 were rejected under 35 USC 103(a) as being unpatentable over Boneh in view of Jones.

The Examiner mailed a fourth, final Office Action on June 2, 2006, wherein claims 1-20 remain rejected under 35 USC 103(a) as being unpatentable over Boneh in view of Jones.

The remarks herein are in response to the fourth Office Action.

Rejection under 35 U.S.C. 103(a)

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boneh, et al (Pub. No. 2002/0112167) (Boneh) in view of Jones, et al. (U.S. Patent No. 6,088,800 (Jones).

As succinctly stated in the MPEP, to establish a prima facie case of obviousness, three basic criteria must be satisfied:

“First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claimed limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on the applicant’s disclosure.” Section 706.02(j) (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

“To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” MPEP 706.02(j) (quoting *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)).

The Applicant respectfully traverses the rejection.

The Applicant submits that the combination of Boneh and Jones does not teach or suggest all the claimed limitations in any of the independent claims 1, 7, 12, and 15.

Teachings of Boneh:

Boneh teaches, in the Abstract: “A method and apparatus are provided for *protecting sensitive information within server* or other computing environments. Numerous electronic requests addressed to a server system are received over network couplings and evaluated. The evaluation scans for sensitive information including credit card information and private user information. Upon detecting sensitive data, *cryptographic operations are applied to the sensitive data*. When the sensitive data is being *transferred to the server system*, the *cryptographic operations encrypt the sensitive data prior to transfer* among components of the server system. When sensitive data is being *transferred from the server system*, the *cryptographic operations decrypt the sensitive data prior to transfer* among the network couplings. The cryptographic operations also include hash, and keyed hash operations.” (emphasis added)

Boneh teaches that one or more TE Appliances (e.g., 102, 202, 204) perform the encryption and/or decryption.

Boneh teaches that function of the TE Appliances may be dedicated network appliances or distributed among various associated network components (page 2, par. 0027)

Boneh teaches: “When the TE Appliance identifies tags indicating that the associated data is sensitive, it applies an *appropriate cryptographic operation* to the data within these tags, in block 306. For example, incoming sensitive data is *encrypted using known*

*encryption algorithms* such as know public key infrastructure (“PKI”) encryption algorithms or the Data Encryption Standard (“DES”).” (page 2, par. 29) (emphasis added)

Boneh, at page 5, par. 0061 and 0062, as cited by the Examiner, merely provides a general description of a “processor,” including CPUs, DSPs, and ASICs, and a general description of a “computer-readable media,” respectively.

Teachings of Jones:

Jones teaches three *known encryption algorithms*, including DES and RC5 (both standard IPSEC algorithms), and IDEA (i.e., a PGP encryption algorithm). (col. 5, lines 49-53)

The Applicant also incorporates by reference, but excludes for the sake of brevity herein, the Applicant’s extensive analysis of Jones in the Applicant’s previous response dated June 24, 2005 in reply to the Examiner’s previous Office Action dated March 24, 2005. The Applicant encourages the Examiner to review the Applicant’s extensive analysis of Jones when considering the present response.

Applicant’s remarks on Boneh and Jones:

In the Examiner’s rejection (i.e., not the Examiner’s comments), the Examiner’s citation of Jones adds little new to a combination with Boneh because Jones example of a DES encryption algorithm (col. 5, lines 49-53) is also taught in Boneh (page 2, par. 29).

Applicant’s response to the Examiner’s comments in the present Office Action:

The Examiner’s comments on page 2-5 of the present Office Action are confusing to the Applicant, and do not appear to be consistent with the Examiner’s rejection presented on pages 6-10, which the Applicant addressed in the response most recently filed on March 8, 2006.

Confusing aspects for the Applicant of the Examiner’s comments on page 2-5 of the present Office Action include, for example, the following.

- b) The Examiner’s comments appear to be arguing Jones in view of Boneh, although the prior and the presently maintained rejection is for Boneh in view of Jones.

For example, in the prior and presently maintained rejection for claim 1, the Examiner cited Boneh at page 5, par. 0061 and 0062 for disclosing most of the limitations in claim 1, and cited Jones for disclosing a multi-layer protocol at col. 5, lines 49-53.

However, in the Examiner's comments at point 4 of the present Office Action, the Examiner disagrees with the Applicant by citing what Jones discloses "cryptographic acceleration function of a software application", "data transferred among processors operating one layer of the multi-layer protocol such as IPSec and SSL by utilizing operands of the encryption pipeline processor", and a high performance processor, such as a digital signal processor, operating on one layer of an SSL protocol" (e.g., lines 10 and 12). The Examiner continues to cite Boneh and Jones for disclosing a DSP (line 14), and "accessible memory to each of the processors passing operands" (page 3, lines 2 and 3).

Therefore, although the Examiner cites both Boneh and Jones in each of the Examiner's comments and the prior and presently maintained rejection, the Examiner appears to be citing the references in an opposite way, and using the citations in different ways in the Examiner's comments than in the prior and the presently maintained rejection.

- b) The Examiner's comments appear to be citing portions of Boneh and/or Jones that were not cited in the prior and the presently maintained rejection.

For example, as explained above under point 1, the Examiner appears to be relying on citations in Boneh and/or Jones that were not cited in the prior and the presently maintained rejection.

Therefore, the Examiner's citation of different parts of the references appears to be making new arguments that were not presented in the prior and the presently maintained rejection.

- b) The Examiner's comments appear to be citing portions of Boneh and/or Jones that do not meet the limitations of the claim language.

For example, as explained above under point 1, in the prior and presently maintained rejection for claim 1, the Examiner cited Boneh at page 5, par. 0061 and 0062 for disclosing most of the limitations in claim 1, and cited Jones for disclosing a multi-layer protocol at col. 5, lines 49-53. The Applicant responded to this rejection in the most recent response dated

March 8, 2006 by stating that the Examiner's rejection did not meet each limitation of the claims, as shown in claim 1, for example.

However, in the Examiner's comments at point 4 of the present Office Action, the disagrees with the Applicant by citing what Jones discloses "cryptographic acceleration function of a software application", "data transferred among processors operating one layer of the multi-layer protocol such as IPSec and SSL by utilizing operands of the encryption pipeline processor", and a high performance processor, such as a digital signal processor, operating on one layer of an SSL protocol" (e.g., lines 10 and 12). The Examiner continues to cite Boneh and Jones for disclosing a DSP (line 14), and "accessible memory to each of the processors passing operands" (page 3, lines 2 and 3).

As to independent claim 1, Boneh, alone or in combination with Jones, does not teach or suggest at least the following underlined portions.

Claim 1. A device for accelerating functioning of a software application having multi-layer, high overhead protocols, the device comprising:

a first processor operating a software application having a multi-layer protocol;  
a high performance processor configured to operate one layer of the multi-layer protocol according to a command from the first processor; and  
a memory accessible to each of the first processor and the high performance processor for passing commands and data between the first processor and the high performance processor.

The Applicant respectfully submits that the Examiner's comments at point 4 of the present Office Action do not meet the limitations of claim 1 for the reasons previously explained in the Applicant's response to the Office Action dated March 24, 2005, wherein claims 1-20 were rejected under 35 USC 103(a) as being unpatentable over Jones in view of King, where Jones was cited as the primary reference. In that response, the Applicant provided detailed arguments distinguishing the present claims over Jones in view of King. In response to the Applicant's arguments, the Examiner withdrew rejection of Jones in view of King in favor of the previous Office Action on September 8, 2005, wherein claims 1-20 were rejected under 35 USC 103(a) as being unpatentable over Boneh in view of Jones.

Therefore, for the reasons previously explained in the Applicant's response to the Office Action dated March 24, 2005, the Examiner's comments, citing new portions of Boneh and/or Jones, do not meet the limitations of the claim language.

b) The Examiner's comments appear to be generally mentioning disclosed aspects of Boneh and/or Jones, without precisely explaining how the disclosed aspects of Boneh and/or Jones meet each limitation of the present claims.

For example, as explained above under point 3, the prior and presently maintained rejection for claim 1 and the Examiner's comments at point 4 of the present Office Action do not precisely explaining how the disclosed aspects of Boneh and/or Jones meet each limitation of the present claims.

As to independent claim 1, Boneh, alone or in combination with Jones, does not teach or suggest at least the following underlined portions.

Claim 1. A device for accelerating functioning of a software application having multi-layer, high overhead protocols, the device comprising:

- a first processor operating a software application having a multi-layer protocol;
- a high performance processor configured to operate one layer of the multi-layer protocol according to a command from the first processor; and
- a memory accessible to each of the first processor and the high performance processor for passing commands and data between the first processor and the high performance processor.

The Applicant would appreciate it if the Examiner could precisely explaining how the disclosed aspects of Boneh and/or Jones meet each limitation of the present claims. For example, the Applicant would appreciate it if the Examiner could precisely identify in the combination of references correspondence to the claimed elements, such as "a software application," "a first processor," "a high performance processor," and "a memory," and then precisely explain how the combination of references link the claimed elements together in a manner that is claimed.

b) The Examiner's comments appear to be restating arguments related to Jones that the Examiner made in the second, non-final Office Action on March 24, 2005, which the Applicant traversed.

As mentioned under point 3 above, the Applicant respectfully submits that the Examiner's comments at point 4 of the present Office Action do not meet the limitations of claim 1 for the reasons previously explained in the Applicant's response to the Office Action

dated March 24, 2005, wherein claims 1-20 were rejected under 35 USC 103(a) as being unpatentable over Jones in view of King, where Jones was cited as the primary reference. In that response, the Applicant provided detailed arguments distinguishing the present claims over Jones in view of King. In response to the Applicant's arguments, the Examiner withdrew rejection of Jones in view of King in favor of the previous Office Action on September 8, 2005, wherein claims 1-20 were rejected under 35 USC 103(a) as being unpatentable over Boneh in view of Jones.

Therefore, the Applicants respectfully submits that the Examiner rejected the claims based on Boneh in view of Jones using a first set of citations, and then flip-flopped in the Examiner's comments to reject the claims based on Jones in view of Boneh using a second set of citations.

With regards to the Applicant's comments 1-5 above, the Applicant recognizes that a combination of Boneh in view of Jones may include Jones in view of Boneh. However, the Applicant submits that it is improper for the Examiner to:

- a) assert Jones in view of King, with Jones as the primary reference,
- b) withdraw Jones in view of King responsive to the Applicant's arguments related to Jones,
- c) assert Boneh in view of Jones, with Boneh as the primary reference, and
- d) reassert Boneh in view of Jones, with Boneh as the primary reference, by arguing Jones in view of Boneh, with Jones as the primary reference.

The Applicant respectfully submits that similar arguments, as explained above in 1-5, also apply to independent claim 7, 12, and 15, without going into laborious detail.

The Applicant respectfully requests that the Examiner review:

- a) the present file history for consistency of argument/traversing, especially with respect to Jones, and
- b) the previous and the presently maintained rejection as compared to the Examiner's present comments.

In summary, Boneh, alone or in combination with Jones, appears to teach or suggest applying an “*appropriate cryptographic operation*,” using “*known encryption algorithms* such as know public key infrastructure (“PKI”) encryption algorithms or the Data Encryption Standard (“DES”).” (page 2, par. 29) Boneh’s description of a “processor” and a “computer-readable media,” at page 5, par. 0061 and 0062, respectively, merely generally describes these terms.

“The present invention provides a device and method that helps to accelerate the complex encryption and authentication algorithms exist within the security protocols by partitioning the cryptographic layers and distributing them to a high performance processor, such as a digital signal processor. The present invention thereby provides a high performance computing engine that implement the functions within these algorithms with a minimum of delay and a minimum cost to the consumer.” (Summary of the Invention, par. 1)

Therefore, the present invention is an improvement over the known encryption algorithms, as taught by Boneh, alone or in combination with Jones.

The present application was filed on April 5, 2001, and the oath or declaration for the present application was signed on March 21, 2001. Boneh has a provisional filing date of January 4, 2001. 35 U.S.C. 102(e) states: “the invention was described in — (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent.” If necessary, the Applicant reserves the right to overcome the present rejection under 35 U.S.C. 103(a) also by showing that Boneh’s provisional filing date of January 4, 2001 is after the invention by the applicant for patent.

In view of the foregoing, Applicant submits that all pending claims are in condition for allowance. Applicant respectfully requests the reconsideration and reexamination of this application and the timely allowance of the pending claims. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 17-0026. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

Dated: September 5, 2006

By: \Donald C. Kordich\  
Donald C. Kordich  
Attorney for Applicant  
Registration No. 38,213

QUALCOMM Incorporated  
5775 Morehouse Drive  
San Diego, California 92121-2779  
Telephone: (858) 658-5928  
Facsimile: (858) 658-2502